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Subject: Additional Comments on Issues for January 28 Meeting
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Via e-mail
January 27, 1998
Judy Heath
CALFED Bay-Delta Program
Water Quality Technical Group
1416 Ninth Street; Ste 1155
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Dear Judy:

Responding to your January 13, 1998 memorandum concerning the Water Quality Parameter Assessment Team meeting on January 28, 1998 in which you present a revised agenda, I wish to provide the following comments. Much of the material presented in your January 13, 1998 memorandum had been previously distributed in an undated mailing to the Parameter Assessment Team participants covering the December 3, 1997 meeting. I have provided detailed comments to Rick Woodard, with a copy to you, on a number of aspects of the December 3, 1997 meeting.

Chromium VI

I assume that since chromium VI has already been reviewed by the PAT that there is no need to fill out the forms provided with your January 13 memo on this constituent.

Request Forms

The Request Form for Addition or Deletion to the CALFED Water Quality Parameter of Concern List appears to be appropriate provided that those completing the form provide detailed information on the PROBLEM.

With respect to the "Parameter Characteristics," the fourth item, "The water quality problem caused by the parameter is generally recognized..." should not be a major issue. The chromium VI problem is not generally recognized. Problems should be brought forth and allowed to stand on their own merit. Whether an agency or the scientific community generally recognizes the problem should not be an important issue.

The third from last item, "Preponderance of data on the parameter shows concentrations exceed established criteria for the applicable medium..." is dangerous. We have already seen how CALFED management is using Long and Morgan sediment quality guidelines without proper public peer review.

A characteristic that is not on this list that should be is "Accumulate within aquatic organism tissue (bioaccumulation) to levels that cause the organisms to be considered hazardous to higher trophic level organisms including man's use of the organism as food."

Another characteristic that could be included that should be considered is impairing the aesthetic quality of resources, such as tastes and odors in

fish. There are some constituents which, while not affecting water use directly, affect the use of the resources by causing the fish to have obnoxious odors.

There are a number of Parameters of Concern already on the CALFED list which, in my opinion, would not stand up to the scrutiny set forth in this type of review. It is for this reason that I have recommended that the Parameters of Concern all be subjected to the same degree of review and that this effort not be restricted just to those that are to be added or deleted from the existing list.

Attached to this January 13, 1998 memo is a "Summary of Common Programs" where the second bulleted item, "Water Quality" includes the terms "pollutant" and "pollutants." To my knowledge, CALFED has never defined "pollutant." Its management uses the term loosely to mean any chemical constituent. "Pollutant" should be explicitly defined in CALFED documents as those constituents which impair the designated beneficial uses of the CALFED jurisdiction waters. This would be in accord with Porter-Cologne and Clean Water Act definitions. Under these definitions, a "pollutant" is not a constituent that in some places at some times from some sources may be adverse to water quality. It is a constituent that has a high degree of potential to be specifically adverse to water quality within the Delta and its associated waters.

January 28, 1998 Meeting Agenda

In the Agenda for the January 28, 1998 meeting provided with your January 13, 1998 memo, you have provided a list of parameters that are to be discussed. >From my experience, a number of these parameters, such as chromium VI, fall in a similar category as do a number of those already on the Parameters of Concern list, i.e. should be reliably monitored to determine whether there is the potential for a significant water quality problem. This monitoring should also include an evaluation of potential target values or, more appropriately, approaches for establishing load reductions of toxic - available forms of constituents.

It is important that at the January 28, 1998 meeting a clear statement of what is going to be done with these target values be presented. The last time I heard anything on this was almost a year ago when at that time the Water Quality Technical Group was headed down a technically invalid path of conducting chemical constituent modeling to determine the load reductions that must occur to achieve the target values. With very few, possibly no exceptions, the degree of understanding of load of constituent - water quality impacts that exist within the Delta is so inadequate at this time that any attempts to do modeling of the type that was discussed a year ago to establish appropriate loads will be a waste of money. Several years of properly conducted, intensive work needs to be done on virtually all of the parameters of concern before first, it is possible to define that there is a real water quality problem associated with the parameter and second, define a target value which could serve as a basis for establishing the load reductions of those sources that contribute toxic, available forms of the constituent to the waterbody that is impacting the Delta's resources.

MTBE

Ange Werner of the Sierra Club has recommended that MTBE be added to the Parameters of Concern. I have considerable familiarity with MTBE as water pollutant and have accumulated literature beyond that referenced by Ms. Werner on this issue. It is my recommendation that MTBE, like a wide variety of other parameters, be included with chromium VI as a potential Parameter of Concern for which there is need for monitoring within the Delta to determine whether its concentrations occur at sufficient levels to be a threat to the aesthetic quality of drinking water, public health and aquatic life. The problem of MTBE universally, thus far, are aesthetic quality, i.e. tastes and odors, in water supplies. Contrary to the implications, there is considerable information which indicates that it is not a significant threat to public health or aquatic life. Yesterday, the American Water Works Association

newsletter announced that the US EPA has recommended MTBE levels of 20 to 40 µg/L in domestic water supplies based on objectionable tastes. According to the US EPA, these recommended values are "about 20,000 to 100,000 (or more) times lower than the range of exposure levels in which cancer or noncancer effects were observed in rodent tests." I understand that copies of the advisory and companion fact sheet can be downloaded from the Internet at <www.epa.gov/OST> or obtained by calling (800) 490-9198.

Development of Target Values

Attached to the undated materials on the December 3, 1997 meeting was a "Suggested Criteria for Developing Water Quality Targets." It is stated that these materials were extracted from minutes, handouts and reports by the Ecosystem, Agriculture, and Urban Subteams of the CALFED Water Quality Program. This issue needs to receive a comprehensive review since, as being developed now and discussed herein, CALFED is headed down a technically invalid approach that could readily result in massive waste of public and private funds chasing constituents because of an inappropriately-selected criterion, such as the Long and Morgan sediment quality guideline. CALFED Water Quality Program management and the various subteams have included in the list of water quality targets parameters that are not technically valid, such as the National Academy of Science guidelines for tissue concentrations. I have provided detailed discussions in previous correspondence as to why those so-called guidelines are not guidelines. If the National Academies of Science and Engineering are asked whether those are valid guidelines that are applicable today, as I have done, you will find that they are not valid. In fact, they are unknown to the NAS technical staff responsible for addressing bioaccumulation of constituents in fish.

The sediment targets listed involving Long and Morgan co-occurrence values are, as discussed in previous correspondence, not appropriate guidelines for CALFED programs. These so-called guidelines are based on obviously well-known to be technically invalid approaches to estimate whether a constituent in a sediment is toxic. A far more reliable, readily implementable approach is to directly assess toxicity. This approach has been used since the late 1970s by the US EPA and Corps of Engineers in regulating contaminated sediments associated with dredging projects. It can and should be readily used in the Delta. No attempt should be made to use chemical concentrations in sediments to estimate the critical concentrations of chemicals that are of concern because of their toxicity to aquatic life. There have been a number of recent reviews of this issue, including those conducted by the US EPA and NOAA that have concluded that the use of the Long and Morgan values for estimating whether a chemical constituent in sediments is, in fact, toxic is about as reliable as flipping a coin. Over half the time, the Long and Morgan values have been found to be wrong when an unbiased set of data is used. The focus in the CALFED Delta Water Quality Management Program should be on chemical impacts, i.e. toxicity bioaccumulation, and where problems are found, determine the constituent(s) responsible for the toxicity/bioaccumulation.

I look forward to the discussions that will be held on January 28, 1998. Hopefully, this could be an important meeting to help set a more appropriate course for the CALFED Water Quality Management Program than has been formulated previously and apparently exists today.

Sincerely yours,

G. Fred Lee

G. Fred Lee, PhD, DEE

Copy to: R. Woodard
L. Winternitz
L. Snow

GFL:oh